

AMENDMENT TO THE CLAIMS

The following claim listing replaces all prior listings and versions of the claims:

LISTING OF CLAIMS

1. (Cancelled)
2. (Currently amended) The Luneberg lens according to claim [[1]] 6, wherein the inorganic filler having a high dielectric constant comprises a titanate.
3. (Original) The Luneberg lens according to claim 2, wherein the titanate is barium titanate, strontium titanate, calcium titanate, or magnesium titanate.
4. (Cancelled)
5. (Withdrawn/Currently amended) A method of producing a Luneberg lens that satisfies the requirements described in claim [[1]] 6, comprising the steps of:
 - mixing a polyolefin resin and/or a derivative thereof with an inorganic filler having a high dielectric constant, the volume ratio of the polyolefin resin and/or the derivative thereof to the filler being 99 to 50:1 to 50;
 - adding a foaming agent to the resulting resin mixture and then performing pre-expansion;
 - classifying and selecting the resulting pre-expanded beads by gravity separation or size classification; and
 - forming the classified and selected pre-expanded beads into a shape.

6. (Currently Amended) A Luneberg lens having a multilayer structure containing a plurality of layers having different dielectric constants,

wherein the respective structure is produced by mixing a polyolefin resin and/or a derivative thereof with an inorganic filler having a high dielectric constant, the volume ratio of the polyolefin resin and/or the derivative thereof to the filler being 99 to 50:1 to 50, the resulting resin mixture being substantially uniformly cut to make the size of each pellet being 1/4 or less of the wavelength of the electromagnetic wave used, adding a foaming agent to the resulting resin mixture and then performing preliminary expansion, and molding the resulting pre-expanded beads on condition that the concentration of the inorganic filler is within a range of $\pm 0.5\%$ with reference to the designed concentration;

at least a foamed dielectric layer having a dielectric constant of 1.5 or more is formed using the pre-expanded beads that have been classified by gravity separation or size classification such that $f(A)$ satisfies the expression $0.0005 \leq f(A) \leq 0.1$, where $f(A)$ is represented by the equation: $f(A) = \sigma a / A_{ave}$, σa is the deviation of a gas volume fraction A_r in the foamed dielectric layer, and A_{ave} is the average of the gas volume fractions A_{rs} at positions in the foamed dielectric layer; and

~~small beads are used for forming an inner layer of the lens, and large beads are used for forming an outer layer of the lens.~~